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ABSTRACT

Junior high school teachers (at three Pennsylvania schools--urban, suburban, and rural) who were voluntarily involved in a year-long inservice education program on content area reading instruction during 1976-77 were tested one year later after no intervention to see if significant gains made during the workshop year were retained. Posttest scores obtained in May 1977 after the experimental treatment were compared to follow-up posttest scores obtained in May 1978 after no intervention. No significant gains or losses occurred during the nonintervention year in measures of teachers' attitudes toward teaching reading in the content areas and their knowledge of reading skills. The results show that inservice education can make a difference in bringing about lasting changes in teachers' attitudes and knowledge of reading skills. (Author/JM)

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Impact of Content Area Reading Inservice Education on Teachers: A Follow-up Study Conducted One Year Later

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Many secondary school teachers and administrators believe that the most effective method of teaching reading in junior and senior high schools is through content area studies. If instruction in reading skills is incorporated into social studies, mathematics, industrial arts, music, and other areas, students will see a need to learn these skills. Immediate application of reading skills in content subjects reinforces skill learning as well as enables students to acquire content area concepts that are being presented through written materials. In contrast, reading instruction which is offered in a separate class is often not transferred to studying content materials and is, therefore, likely to be forgotten because it is not applied.

Problems exist, however, in implementing the adage, "Every teacher, a teacher of reading," in junior and senior high schools. Content teachers who may be well versed in their subject areas frequently have difficulty individualizing instruction for different reading abilities due to large, changing content classes. Olivero (5) suggests that "probably less than one percent of the secondary teachers have ever been taught the skills" of diagnosis necessary for individualization of instruction. They may simply not have had any course work in reading methods during their own preservice teacher training experience and may not be aware of how to help students read content materials (4). Or they may resist teaching reading skills "by rationalizing that 'reading isn't my subject' " (1).

* Presenter

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To test whether secondary teachers' attitudes and knowledge of reading skills could be positively changed by inservice education, the Content Area Reading Project was funded by the Pennsylvania Department of Education from January 1, 1976 to June 30, 1977. Instruction in content area reading was delivered at three sites -- urban, rural, and suburban -- in Pennsylvania to volunteer junior high school teachers during a year-long program, consisting of fifteen bimonthly sessions taught by the authors, each lasting three hours. Three or six hours of university credit were available as an option for teachers who wished to register for the credits.

A competency-based format was selected since differences among the teachers were anticipated in entry levels and progress in both attitudes and skills. Teachers were provided the objectives for instruction and given multiple opportunities to master these objectives. Topics covered included diagnosis, linguistic differences, motivation, organization for instruction, reading skills development, materials selection, and evaluation of instruction. Model teaching materials -- such as learning centers, skill exercises, and videotapes -- were created by Project staff to demonstrate how teachers might construct and use these materials in their classrooms. A professional library was developed for each site so that teachers could complete assigned readings without having to travel to a university library.

What was learned from this year-long experiment? Evaluation of the Content Area Reading Project focused on teacher variables -- attitudes, knowledge of reading skills, and implementation of workshop objectives -- since changes must occur in teacher variables before student achievement can be affected. Teachers in the three workshop sites were compared in pre and posttesting to other teachers in the same buildings who did not participate in the workshops on two measures of attitude toward teaching

reading in the content areas as well as on a measure of general morale (Purdue Teacher Opinionaire, 2). While morale on the PTO remained approximately the same throughout the school year in all sites for both the experimental and comparison groups, significant differences were found on instruments measuring attitudes toward teaching reading in the content areas. On the Statements Survey, a Likert-type scale (r=.84), significant differences were found at the .05 level. The Situations Survey, a semantic differential scale, yielded three scores, on all of which the experimental group of teachers expressed significantly more positive attitudes than the comparison group ($p < .05$). These included sets of five bipolar adjectives in response to twelve hypothetical classroom situations (Adjectives scale, r=.96); a feasibility scale on which teachers were asked to rate how feasible each situation was (r=.75); and a perceived skill score (r=.91) on which teachers expressed their confidence in implementing the diagnostic-prescriptive strategies demonstrated in the hypothetical situations. (A sample item from each survey is presented in Appendix A.)

Furthermore, on a criterion-referenced knowledge of reading skills test given only to experimental teachers, significant gains ($p < .001$) were made from the pretest to the posttest as well as many more teachers reaching the 80% mastery level on the posttest. Likewise, consultant ratings of the degree of implementation of workshop objectives, obtained through classroom observations before and after the experimental treatment, also showed significant gains ($p < .001$). The results of the Project evaluation are presented in further detail elsewhere (3).

Follow-up Study Conducted One Year Later

Since no formal inservice training was conducted at the three sites during the 1977-78 school year, it was of interest whether the positive

gains in attitudes and knowledge of reading skills made during the 1976-77 school year were retained at the end of the 1977-78 school year with no intervention treatment. Therefore, teachers in the experimental group were retested in May, 1978, with the two attitude surveys and the knowledge of reading skills, criterion-referenced test. The PTO was not readministered since morale had remained stable during the 1976-77 school year and had not shown a relationship to positive changes in attitudes and skills in content area reading. The comparison teachers were not retested because their scores had remained fairly stable during the 1976-77 school year, and there was no reason to expect this pattern to change.

The results are shown in Appendix B in Tables 1-8, presenting the means obtained on posttesting in May, 1977, and on the follow-up posttesting in May, 1978, as well as the analyses of variance. No significant differences were obtained at the .01 level between the experimental group's posttest scores obtained in May, 1977, and in May, 1978. The small fluctuations in means can be expected due to the standard error of measurement in the test instruments.

From the results obtained it appears that the effects of inservice work in content area reading done during one school year are retained one year later without continued formal inservice work. It can be noted, however, that in every case the scores obtained at the suburban site increased rather than decreased during the non-intervention year. It is also in this site that the most administrative support for content area reading instruction was apparent. Nevertheless the gains made in the urban and rural sites during the experimental treatment were retained even with little apparent administrative support. The results are thus encouraging in that inservice education does make a difference in bringing about lasting changes in teachers' attitudes toward content area reading instruction and knowledge of reading skills.

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APPENDIX A

Sample item from Statements Survey: Teaching Reading in Content Areas

J.W. Lee, C.J. Young, E.N. Askov, M.M. Dupuis

It is important that teachers be competent in assessing the general reading levels of students.

(a)	(b)	(c)	(d)	(e)
Strongly Disagree	Slightly Disagree	Not Sure	Slightly Agree	Strongly Agree

Sample item from Situations Survey: Teaching Reading in Content Areas

J.W. Lee, C.J. Young, E.N. Askov, M.M. Dupuis

SITUATION: An English teacher is preparing to teach a short story from the anthology suggested in the curriculum guide.

PLAN: The teacher plans to assign those who are competent readers to read the story on their own and engage in several individualized assignments. The less competent readers will read the story in a guided reading lesson during which the teacher will provide considerable help in vocabulary, concept development, and comprehension.

practical _____:_____:_____:_____:_____:_____:_____impractical

ineffective _____:_____:_____:_____:_____:_____:_____effective

inefficient _____:_____:_____:_____:_____:_____:_____efficient

useful _____:_____:_____:_____:_____:_____:_____useless

desirable _____:_____:_____:_____:_____:_____:_____undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?

feasible _____:_____:_____:_____:_____:_____:_____not feasible

How skilled are you at this time for executing a plan like the one described above?

skilled _____:_____:_____:_____:_____:_____:_____unskilled

APPENDIX B

Table 1. Means of Junior High Teachers on the Statements Survey

Sites	N	Posttest May, 1977	Follow-up May, 1978
Urban	19	92.6	88.4
Suburban	19	91.6	92.0
Rural	15	87.1	90.0

Table 2. Site x Time Analysis of Variance on Junior High Teachers' Statements Survey

Source	df	MS	F	p
Sites	2	14.00	.17	> .05
Error (between Ss)	50	83.82	--	
Time	1	1.88	.05	> .05
Site x Time	2	111.79	2.96	> .05
Error (within Ss)	50	37.73	--	

Table 3. Means of Junior High Teachers on the Situations Survey

Sites	N	Adjectives Scale		Feasibility Scale		Perceived Skill Scale	
		Posttest May, 1977	Follow-up May, 1978	Posttest May, 1977	Follow-up May, 1978	Posttest May, 1977	Follow-up May, 1978
Urban	19	369.6	366.4	75.2	71.1	75.7	72.8
Suburban	19	377.7	389.3	74.8	75.7	73.7	75.6
Rural	15	385.9	369.4	74.1	70.1	77.2	71.9

Table 4. Site x Time Analysis of Variance on Junior High Teachers' Situation Survey - Adjectives Scale

Source	df	MS	F	p
Sites	2	178.17	.08	> .05
Error (between Ss)	49	2192.7	--	
Time	1	188.25	.31	> .05
Site x Time	2	1665.3	2.78	> .05
Error (within Ss)	51	597.95	--	

Table 5. Site x Time Analysis of Variance on
Junior High Teachers' Situation Survey - Feasibility Scale

Source	df	MS	F	p
Sites	2	33.5	.31	> .05
Error	49	108.86	--	
Time	1	51.56	2.22	> .05
Site x Time	2	50.28	2.16	> .05
Error	51	23.22	--	

Table 6. Site x Time Analysis of Variance on
Junior High Teachers' Situation Survey - Perceived Skill Scale

Source	df	MS	F	p
Sites	2	12.67	.10	> .05
Error	49	121.91	--	
Time	1	114.21	3.27	> .05
Site x Time	2	115.57	3.31	.05>p>.01
Error	51	34.91	--	

Table 7. Means of Junior High Teachers on the Criterion-Referenced Skills Test

Sites	N	Posttest May, 1977	Follow-up May, 1978
Urban	19	15.6	13.8
Suburban	19	17.9	18.2
Rural	15	17.2	16.7

Table 8. Site x Time Analysis of Variance on Junior High Teachers' Criterion-Referenced Skills Test

Source	df	MS	F	p
Sites	2	6.17	.48	> .05
Error	49	12.79	--	
Time	1	11.55	2.90	> .05
Site x Time	2	11.30	2.83	> .05
Error	51	3.98	--	